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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/452,753	Applicant(s) MANCHESTER ET AL.	
	Examiner Christopher M Swickhamer	Art Unit 2697	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 December 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5-8* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The lengthy specification and drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification or drawings.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 16, 17 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 16 recites the limitation "the ISDN traffic" in line 20. There is insufficient antecedent basis for this limitation in the claim. The claim will be examined changing "the ISDN traffic" to "ISDN traffic."

- Claims 17 and 20 recite the limitation "the TDM bus." There is insufficient antecedent basis for this limitation in the claim. The claims will be examined assuming "the TDM bus" in claim 17 is "the bus" of claim 14, lines 8, page 75. The "TDM bus" in claim 20 will be examined assuming the "TDM bus" is the "synchronous bus" of claim 18, line 5.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3, 6, 11-15, 17, 18, 20, 22, 24, 29, 30, 32, 34-37, 39, 41, 43, 44, and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Humphrey (USP 6,320,877). Referring to Claim 1, Humphrey discloses a synchronous bus for a telecommunications node (col. 2, lns. 13-23), the bus comprising: a frame repeating at a defined interval (Fig. 12, col. 15, lns. 15-35); each frame comprising of a plurality of bus slots (service channels, Fig. 12); a bus slot (service channel) in at least one frame individually transporting traffic for a DS-0 connection (Fig. 15, col. 16, lns. 35-43); and a set of service channels in the frame together transporting an asynchronous transfer mode (ATM) cell (abstract, Fig. 18, col. 2, lns. 13-23, col. 14, lns. 45-60).

- Referring to Claim 3, Humphrey discloses the bus of Claim 1, further comprising: a point-to-point link between each line card and a switch (core) of a telecommunications node; and each point-to-point link comprising the frame repeating at the defined interval (col. 5, lns. 55-col. 6, lns. 8, col. 15, lns. 15-35).

- Referring to Claim 6, Humphrey discloses the bus of Claim 1, the set of bus slots (service channels) further comprising a block of contiguous bust slots (service channels, Fig. 12).

- Referring to Claim 11, Humphrey discloses the bus of Claim 1, further comprising: each frame further comprising an frame header (overhead portion); the overhead portion comprising routing and administrative data (an internode communication channel, col. 5, lns. 9-31); and the

routing and administrative data (internode communication channel) in at least one frame transporting control traffic generated by a line card of a telecommunications node transmitting the frame and destined for a disparate element of the telecommunications node (col. 5, lns. 57-col. 6, lns. 7).

- Referring to Claim 12, Humphrey discloses the bus of Claim 11, wherein the disparate element of the telecommunications node comprises a disparate circuit card (line card, col. 6, lns. 1-7).

- Referring to Claim 13, Humphrey discloses the bus of Claim 11, wherein the disparate element of the telecommunications node comprises a switch (card, col. 6, lns. 1-7).

- Referring to Claim 14, Humphrey discloses a telecommunications node, comprising: a line card operable to generate a frame including a plurality of bus slots (service channels) each sized to individually transport DS-0 traffic (col. 16, lns. 23-42) and in connection with other service channels to transport an ATM cell to insert DS-0 traffic and ATM cells into the bus slots (service channels, col. 2, lns. 13-22, col. 14, lns. 25-35), and to repeat the frame at a defined interval on a bus (Fig. 12, col. 15, lns. 15-35); and the switch (core) operable to receive the frame from the synchronous bus and to synchronously switch the DS-0 traffic and the ATM cells (col. 5, lns. 55-col. 6, lns. 7, col. 14, lns. 25-35).

- Referring to Claim 15, Humphrey discloses the telecommunications node of Claim 14, further comprising the line card operable to repeat the frame on a point-to-point link between the line card and the switch core (col. 5, lns. 55-col. 6, lns. 7).

- Referring to Claim 17, Humphrey discloses the telecommunications node of Claim 14, wherein each frame of ***the bus*** comprises a header (an overhead portion) including

routing data (an internode communication channel) further comprising: the line card operable to generate control traffic destined for a disparate element of the telecommunications node, to insert the control traffic into the internode communication channel of a frame and to transmit the frame to the switch (core); and the switch (core) operable to switch the control traffic to the destination element based on the position of the control traffic in the routing data (internode communication channel, Fig. 12, col. 5, lns. 55-col. 6, lns. 7).

- Referring to Claim 18, Humphrey discloses a method for communicating traffic between elements in a telecommunications node, comprising: repeating a frame at a defined interval on a synchronous bus (Fig. 12), providing a plurality of bus slots (service channel) in each frame; in at least one frame, transporting traffic for a DS-0 connection in a single service channel (col. 16, lns. 35-43); in the frame, transporting an asynchronous transfer mode (ATM) cell in a set of bus slots (service channels); and synchronously switching the DS-0 traffic and the ATM cell in the frame (col. 14, lns. 24-35).

- Referring to Claim 20, Humphrey discloses the method of Claim 18, wherein ***the bus*** comprises a point-to-point link, further comprising repeating the frame at a defined interval on a point-to point link (col. 15, lns. 15-33).

- Referring to Claim 22, Humphrey discloses the method of Claim 18, further comprising transporting the ATM cell in a block of contiguous bus slots (service channels, col. 15, lns. 50-60).

- Referring to Claim 24, Humphrey discloses the method of Claim 18, further comprising: providing in each frame a header (an overhead portion) including routing data (an internode communication channel, Fig. 12); generating control traffic at a line card of a

telecommunications node; inserting the control traffic into routing and administrative data (an internode communication channel) of a frame; transmitting the frame from the line card to a switch (core) of the telecommunications node; and synchronously switching the control traffic at the switch core to a destination element in the telecommunications node based on a position of the control traffic in the routing data (in the internode communication channel, col. 5, lns. 55-col. 6, lns. 7).

- Referring to Claim 29, Humphrey discloses a line card for a telecommunications node, comprising: a port operable to receive traffic from an external link (col. 5, lns. 55-col. 6, lns. 7); an internal interface operable to connect to a point-to-point link of a synchronous bus (col. 5, lns. 55-col. 6, lns. 7); and a traffic processor operable to generate a frame comprising a frame header (an overhead portion) having routing and administrative data (an internode communication channel, col. 5, lns. 9-22, Fig. 12) and a service traffic portion comprising a plurality of bus slots (service channels, Fig. 12), to generate control traffic destined for a disparate element in the telecommunications node, to insert the control traffic into a slot having routing and administrative data (in the internode communication channel) associated with the disparate element, to insert traffic received at the port into the bus slot (service channels), and to transmit the frame on the point-to-point link of the synchronous bus (col. 5, lns. 55-col. 6, lns. 7).

- Referring to Claim 30, Humphrey discloses the line card of Claim 29, the traffic processor further operable to insert synchronous and asynchronous traffic into the bus slots (service channels, col. 2, lns. 13-23).

- Referring to Claim 32, Humphrey discloses the line card of Claim 29, the traffic processor further operable to insert an asynchronous transfer mode (ATM) cell into a set of bus

slots (service channels) associated with a destination element for the ATM cell within the telecommunications node (col. 2, lns. 13-23, col. 18, lns. 50-60).

- Referring to Claim 34, Humphrey discloses a method for communicating control traffic between elements in a telecommunications node, comprising: generating a frame at a first node element (Fig. 12), the frame comprising routing and administrative data (an internode communication channel, col. 5, lns. 9-23); generating a control message at the first node element; inserting the control message into the frame header with routing and administrative data (internode communication channel) of the frame; transmitting the frame on a synchronous bus to a switch element; and synchronously switching the control message in the internode communication channel to a destination element based on the position of the control message in the routing and administrative data (internode communication channel, col. 5, lns. 55-col. 6, lns. 7).

- Referring to Claim 35, Humphrey discloses the method of Claim 34, wherein the source and destination node elements each comprise a line card (col. 5, lns. 55-col. 6, lns. 7).

- Referring to Claim 36, Humphrey discloses the method of Claim 34, wherein the source and destination node elements each comprise a processor on disparate cards (col. 5, lns. 55-col. 6, lns. 7).

- Referring to Claim 37, Humphrey discloses a system for communicating traffic between elements in a telecommunications node, comprising: a computer-readable medium; and software stored on the computer-readable medium (col. 17, lns. 20-30), the software operable to repeat a frame at a defined interval on a synchronous bus (Fig. 12), to provide a plurality of bus slots (service channels, Fig. 12) in each frame, to transmit in at least one frame traffic for a DS-0

connection in a single bus slot (service channel, col. 16, lns. 35-45), to transmit in the frame an asynchronous transfer mode (ATM) cell in a set of bus slots (service channels, col. 2, lns. 13-23), and to synchronously switch DS-0 traffic and ATM cells received in a frame (Fig. 10, lns. 25-35).

- Referring to Claim 39, Humphrey discloses the system of Claim 37, wherein the synchronous bus comprises a point-to-point link, the software further operable to repeat the frame at a defined interval on the point-to-point link (Fig. 12, col. 15, lns. 15-33).

- Referring to Claim 41, Humphrey discloses the system of Claim 37, the software further operable to transmit the ATM cell in a block of contiguous bus slots (service channels, col. 18, lns. 50-60).

- Referring to Claim 43, Humphrey discloses a traffic processor for a line card of a telecommunications node, comprising: a computer-readable medium; and software stored on the computer-readable medium (col. 17, lns. 20-30), the software operable to generate a frame comprising a plurality of bus slots (service channels) and a frame header (an overhead portion) having routing and administrative data (an internode communication channel) in a service traffic portion to generate control traffic destined for a disparate element in the telecommunications node (Fig. 12, col. 5, lns. 9-22), to insert the control traffic into the routing and administrative data (a slot in the internode communication channel) associated with the disparate element, to insert traffic received at a port into the service channels, and to transmit the frame on a point-to-point link of a synchronous bus (col. 5, lns. 55-col. 6, lns. 7).

- Referring to Claim 44, Humphrey discloses the traffic processor of Claim 43, the software further operable to insert synchronous and asynchronous traffic into the bus slots (service channels, 18, lns. 50-60).

- Referring to Claim 46, Humphrey discloses the traffic processor of Claim 43, the software further operable to insert an asynchronous transfer mode (ATM) cell into a set of bus slots (service channels) associated with a destination element for the ATM cell within the telecommunications node (col. 18, lns. 50-60).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 2, 7, 19, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey in view of Sutherland (USP 5,594,576). Referring to Claim 2, Humphrey discloses the bus of Claim 1, wherein the defined interval comprises 125 microseconds (col. 15, lns. 15-35), but does not expressly disclose each service channel is two bytes in size. Sutherland discloses a system where DS-0 channels are sixteen bits wide, which is equivalent to two bytes (col. 5, lns. 18-26). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make the service channel two bytes wide. One of ordinary skill in the art would have been motivated to do this since it would be able to hold additional frame

information, such as the ABCD signaling highway and frame synchronization information (col. 5, lns. 18-26).

- Referring to Claim 7, Humphrey discloses the bus of Claim 6, wherein the defined interval comprises 125 microseconds (Fig. 12), but does not expressly disclose each service channel is two bytes in size. Sutherland discloses a system where DS-0 channels are sixteen bits wide, which is equivalent to two bytes (col. 5, lns. 18-26). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make the service channel two bytes wide. One of ordinary skill in the art would have been motivated to do this since it would be able to hold additional frame information, such as the ABCD signaling highway and frame synchronization information (col. 5, lns. 18-26). Humphrey and Sutherland do not expressly disclose the contiguous block of service channels is 27 channels. Humphrey discloses the bus slots (service channels) can be any number of slots (col. 15, lns. 35-50). It would be obvious to one of ordinary skill in the art to select any number of bus slots in the frame. One of ordinary skill in the art would have been motivated to do this since as the number of bus slots increase, the amount of data used in frame overhead decreases compared to the amount of data transmitted, thus overall output efficiency increases.

- Referring to Claim 19, Humphrey discloses the method of Claim 18, further comprising repeating the frame at 125 microsecond intervals (Fig. 12), but does not expressly disclose wherein the service channel is two bytes in size. Sutherland discloses a system where DS-0 channels are sixteen bits wide, which is equivalent to two bytes (col. 5, lns. 18-26). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make the service channel two bytes wide. One of ordinary skill in the art would have been motivated

to do this since it would be able to hold additional frame information, such as the ABCD signaling highway and frame synchronization information (col. 5, lns. 18-26).

- Referring to Claim 38, Humphrey discloses the system of Claim 37, the software operable to repeat the frame at 125 microsecond intervals., but does not expressly disclose wherein the service channel is two bytes in size (Fig. 12), Sutherland discloses a system where DS-0 channels are sixteen bits wide, which is equivalent to two bytes (col. 5, lns. 18-26). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make the service channel two bytes wide. One of ordinary skill in the art would have been motivated to do this since it would be able to hold additional frame information, such as the ABCD signaling highway and frame synchronization information (col. 5, lns. 18-26).

8. Claims 4, 5, 21, 25, 26, 31, 40, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey in view of O'Connell (USP 5,398,234). Referring to Claim 4, Humphrey discloses the bus of Claim 1, the service channel transporting traffic for the DS-0 connection but does not expressly disclose further comprising a current channel associated signaling (CAS) value for the DS-0 connection. O'Connell discloses a system with a DS-0 connection with a CAS value (abstract). At the time the invention was made, it would have been obvious to one of ordinary skill in the art for the DS-0 connection to have a CAS value. One of ordinary skill in the art would have been motivated to do this since is can be used for digitizing voice in-band signaling not normally used for data transmission (abstract).

- Referring to Claim 5, Humphrey discloses the bus of Claim 1, further comprising every service channel transporting traffic for a DS-0 connection but does not expressly disclose a current channel associated signaling (CAS) value for the DS-0 connection. O'Connell discloses

a system with a DS-0 connection with a CAS value in every channel (abstract, col. 1, lns. 1-30). At the time the invention was made, it would have been obvious to one of ordinary skill in the art for the DS-0 connection to have a CAS value. One of ordinary skill in the art would have been motivated to do this since is can be used for digitizing voice in-band signaling not normally used for data transmission (abstract).

- Referring to Claim 21, Humphrey discloses the method of Claim 18, but does not expressly disclose claim 18 further comprising transporting in-band a current channel associated signaling (CAS) value for the DS-0 connection in the service channel for the DS-0 connection. O'Connell discloses a system with a DS-0 connection with a CAS value (abstract, col. 1, lns. 1-30). At the time the invention was made, it would have been obvious to one of ordinary skill in the art for the DS-0 connection to have a CAS value. One of ordinary skill in the art would have been motivated to do this since is can be used for digitizing voice in-band signaling not normally used for data transmission (abstract).

- Referring to Claim 25, Humphrey discloses a telecommunications signal transmitted on a synchronous bus of a telecommunications node, comprising: a frame transmitted in a 125 microsecond interval (col. 2, lns. 13-23, Fig. 12); the frame comprising a plurality of bus slots (service channels); a bus slot (service channel) transporting traffic for a DS-0 connection (col. 16, lns. 35-43), and a block of contiguous service channels together transporting an asynchronous transfer mode (ATM) cell (col. 14, lns. 25-35), the block of contiguous bus slots (service channels) located at a position in the frame associated with a destination element for the ATM cell (col. 14, lns. 60-68), but does not expressly disclose the bus slot (service channel) including a current channel associated signaling (CAS) value for the DS-0 connection.

O'Connell discloses a system with a DS-0 connection with a CAS value (abstract, col. 1, lns. 1-30). At the time the invention was made, it would have been obvious to one of ordinary skill in the art for the DS-0 connection to have a CAS value. One of ordinary skill in the art would have been motivated to do this since is can be used for digitizing voice in-band signaling not normally used for data transmission (abstract).

- Referring to Claim 26, Humphrey discloses the telecommunications signal of Claim 25, the frame further comprising frame header (an overhead portion) including header data (an internode communication channel, Fig. 12), the header data (internode communication channel) comprising: control traffic generated by a line card transmitting the frame; and the control traffic located at a position in the frame header (internode communication channel) associated with a destination element for the control traffic (col. 5, lns. 9-22, lns. 55-col. 6, lns. 7).

- Referring to Claim 31, Humphrey discloses the line card of Claim 29, the traffic processor further operable to insert DS-0 traffic (col. 16, lns. 35-43), but does not expressly disclose a current channel associated signaling (CAS) value for the DS-0 traffic into a service channel. O'Connell discloses a system with a DS-0 connection with a CAS value (abstract, col. 1, lns. 1-30). At the time the invention was made, it would have been obvious to one of ordinary skill in the art for the DS-0 connection to have a CAS value. One of ordinary skill in the art would have been motivated to do this since is can be used for digitizing voice in-band signaling not normally used for data transmission (abstract).

- Referring to Claim 40, Humphrey discloses the system of Claim 37, but does not expressly disclose the software further operable to transmit in-band a current channel associated signaling (CAS) value for the DS-0 connection in the service channel for the DS-0 connection.

O'Connell discloses a system with a DS-0 connection with a CAS value (abstract, col. 1, lns. 1-30). At the time the invention was made, it would have been obvious to one of ordinary skill in the art for the DS-0 connection to have a CAS value. One of ordinary skill in the art would have been motivated to do this since is can be used for digitizing voice in-band signaling not normally used for data transmission (abstract).

- Referring to Claim 45, Humphrey discloses the traffic processor of Claim 43, the software further operable to insert DS-0 traffic into a bus slot (service channel), but does not expressly disclose also inserting a current channel associated signaling (CAS) value for the DS-0 traffic. O'Connell discloses a system with a DS-0 connection with a CAS value (abstract, col. 1, lns. 1-30). At the time the invention was made, it would have been obvious to one of ordinary skill in the art for the DS-0 connection to have a CAS value. One of ordinary skill in the art would have been motivated to do this since is can be used for digitizing voice in-band signaling not normally used for data transmission (abstract).

9. Claims 8, 9, 16, 23, 33, 42 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey in view of Rustad (USP 6,009,106). Referring to Claim 8, Humphrey discloses the bus of Claim 1, the set of service channels comprising a first set of service channels, but does not expressly disclose a second set of service channels together transporting traffic for an integrated services digital network (ISDN) connection. Rustad discloses a system with DS-0 channels to carry an ISDN connection (col. 3, lns. 64-col. 4, lns. 5). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Humphrey, with the ability to support ISDN. One of ordinary skill in the art would have been motivated to do this since ISDN technology can be used to provide

dynamic bandwidth allocation between switched data and unswitched data on the local loop (col. 4, lns. 5-10).

- Referring to Claim 9, Humphrey and Rustad disclose the bus of Claim 8, but do not expressly disclose the second set of service channels further comprising a block of contiguous service channels together transporting two B-channels and a D-channel of the ISDN connection. Rustad discloses a system with DS-0 channels to carry an ISDN connection with DS-0 channels containing the ISDN B and D-channels (col. 3, lns. 64-col. 4, lns. 5). At the time the invention was made, it would have been obvious to \one of ordinary skill in the art to combine the system of Humphrey, with the ability to support ISDN B and D-channels. One of ordinary skill in the art would have been motivated to do this since ISDN technology can be used to provide dynamic bandwidth allocation between switched data and unswitched data on the local loop (col. 4, lns. 5-10).

- Referring to Claim 16, Humphrey discloses the telecommunications node of Claim 14, but does not expressly disclose wherein each bus slot (service channel) is sized to transport in connection with other bus slots (service channels) ISDN traffic, further comprising: the line card operable to insert the integrated services digital network (ISDN) traffic into bus slots (service channels); and the switch (core) operable to synchronously switch the ISDN traffic. Rustad discloses a system with DS-0 channels to carry and switch ISDN traffic (abstract, col. 3, lns. 64-col. 4, lns. 5). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Humphrey, with the ability to support ISDN. One of ordinary skill in the art would have been motivated to do this since ISDN technology can

be used to provide dynamic bandwidth allocation between switched data and unswitched data on the local loop (col. 4, lns. 5-10).

- Referring to Claim 23, Humphrey discloses the method of Claim 18, but does not expressly disclose claim 18 further comprising transporting traffic for an integrated services digital network (ISDN) connection in a second set of service channels of the frame. Rustad discloses a system with DS-0 channels to carry an ISDN connection (col. 3, lns. 64-col. 4, lns. 5). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Humphrey, with the ability to support ISDN. One of ordinary skill in the art would have been motivated to do this since ISDN technology can be used to provide dynamic bandwidth allocation between switched data and unswitched data on the local loop (col. 4, lns. 5-10).

- Referring to Claim 33, Humphrey discloses the line card of Claim 29, the traffic processor further operable to insert integrated services digital network (ISDN) traffic into a set of service channels. Rustad discloses a system with DS-0 channels to carry an ISDN connection (col. 3, lns. 64-col. 4, lns. 5). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Humphrey, with the ability to support ISDN. One of ordinary skill in the art would have been motivated to do this since ISDN technology can be used to provide dynamic bandwidth allocation between switched data and unswitched data on the local loop (col. 4, lns. 5-10).

- Referring to Claim 42, Humphrey discloses the system of Claim 37, but does not expressly disclose the software further operable to transmit traffic for an integrated services digital network (ISDN) connection in a second set of service channels of the frame. Rustad

discloses a system with DS-0 channels to carry an ISDN connection (col. 3, lns. 64-col. 4, lns. 5). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Humphrey, with the ability to support ISDN. One of ordinary skill in the art would have been motivated to do this since ISDN technology can be used to provide dynamic bandwidth allocation between switched data and unswitched data on the local loop (col. 4, lns. 5-10).

- Referring to Claim 47, Humphrey discloses the traffic processor of Claim 43, the software, further operable to insert integrated services digital network (ISDN) traffic into a set of service channels. Rustad discloses a system with DS-0 channels to carry an ISDN connection (col. 3, lns. 64-col. 4, lns. 5). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Humphrey, with the ability to support ISDN. One of ordinary skill in the art would have been motivated to do this since ISDN technology can be used to provide dynamic bandwidth allocation between switched data and unswitched data on the local loop (col. 4, lns. 5-10).

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey and Rustad as applied to claim 9 above, and further in view of Sutherland. Referring to Claim 10, Humphrey discloses the bus of Claim 9, wherein the defined interval comprises 125 microseconds, but does not expressly disclose each service channel is two bytes in size. Sutherland discloses a system where DS-0 channel are sixteen bits wide, which is equivalent to two bytes (col. 5, lns. 18-26). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make the service channel two bytes wide. One of ordinary skill in the art would have been motivated to do this since it would be able to hold additional frame

information, such as the ABCD signaling highway and frame synchronization information (col. 5, lns. 18-26).

11. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey and O'Connell as applied to claim 25 above, and further in view of Rustad. Referring to Claim 27, Humphrey discloses the telecommunications signal of Claim 25, a set of bus slots (service channels) together transporting traffic, but does not expressly disclose the traffic is for an integrated services digital network (ISDN) connection. Rustad discloses a system with DS-0 channels to carry an ISDN connection (col. 3, lns. 64-col. 4, lns. 5). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Humphrey, with the ability to support ISDN. One of ordinary skill in the art would have been motivated to do this since ISDN technology can be used to provide dynamic bandwidth allocation between switched data and unswitched data on the local loop (col. 4, lns. 5-10).

- Referring to Claim 28, Humphrey discloses the telecommunications signal of Claim 27, the set of service channels comprising a block of contiguous service channels, but does not expressly disclose transporting two B-channels and a D-channel of the ISDN connection. Rustad discloses a system with DS-0 channels to carry an ISDN connection with DS-0 channels containing the ISDN B and D-channels (col. 3, lns. 64-col. 4, lns. 5). At the time the invention was made, it would have been obvious to \one of ordinary skill in the art to combine the system of Humphrey, with the ability to support ISDN B and D-channels. One of ordinary skill in the art would have been motivated to do this since ISDN technology can be used to provide dynamic bandwidth allocation between switched data and unswitched data on the local loop (col. 4, lns. 5-10).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Graves et al, US PGPUB 2002/0012138. *Architecture repartitioning to simplify outside-plant component of fiber-based access system.*
- Thomas et al, USP 6,400,713. *Integrated element manager and integrated multi-services access platform.*
- Brolin et al, USP 6,359,859. *Architecture for a hybrid STM/ATM add-drop multiplexer.*
- Eames et al, USP 6,078,593. *Method and apparatus for reliable operation of universal voice grade cards.*
- Stevenson III, USP 5,889,773. *Method and apparatus for placing time division multiplexed telephony traffic into an asynchronous transfer mode format.*

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M Swickhamer whose telephone number is (703) 306.4820. The examiner can normally be reached on 8:00-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (703) 305.4798. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872.9314 for regular communications and (703) 872.9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305.3900.

CMS
April 8, 2003

RICKY NGO
PRIMARY EXAMINER